

2003



THIRD ANNUAL

Microsoft® **STRATEGIC ARCHITECT FORUM**

for Partners

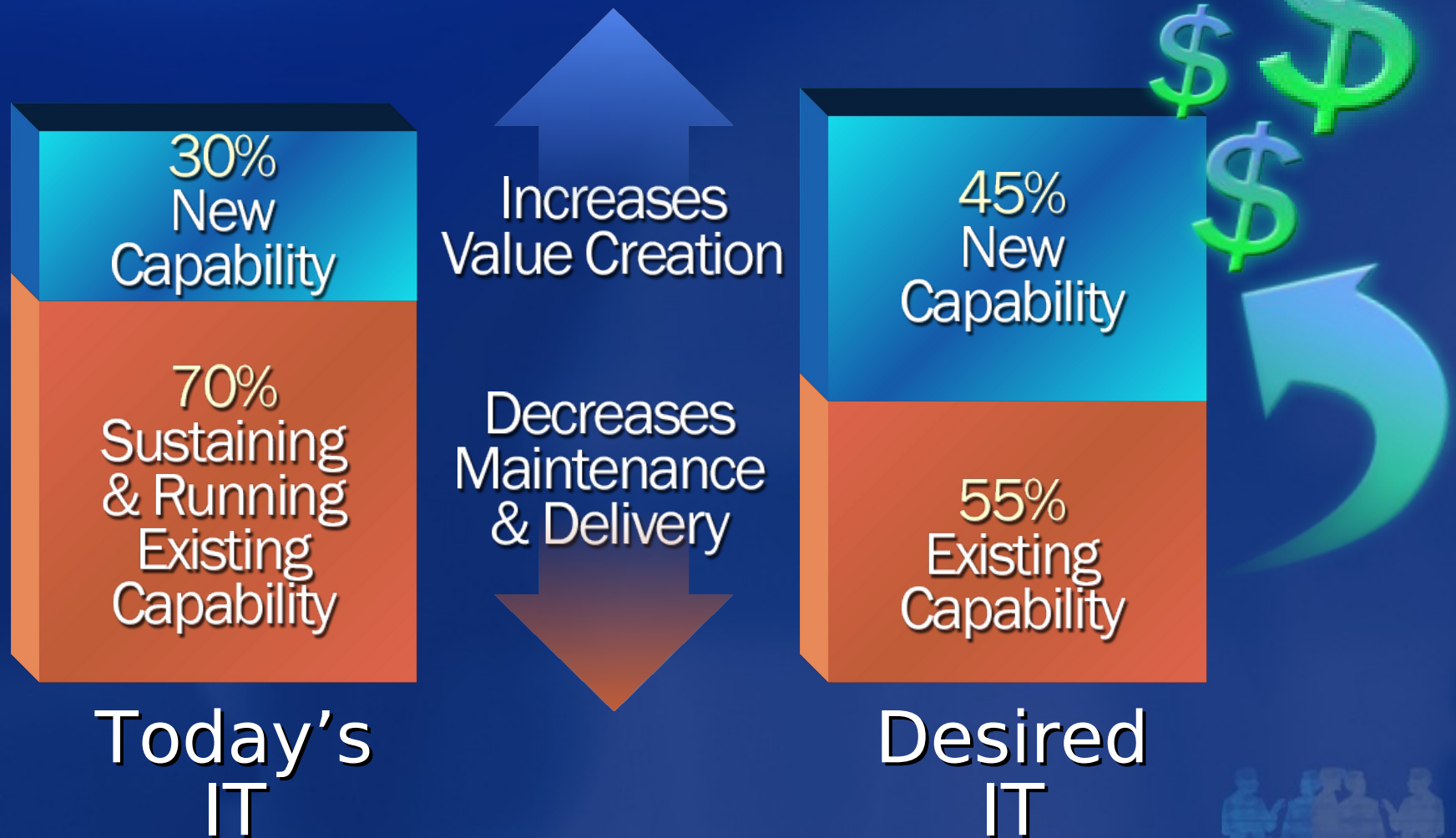
Dynamic Systems Initiative

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Windows Server
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IT Environments Today

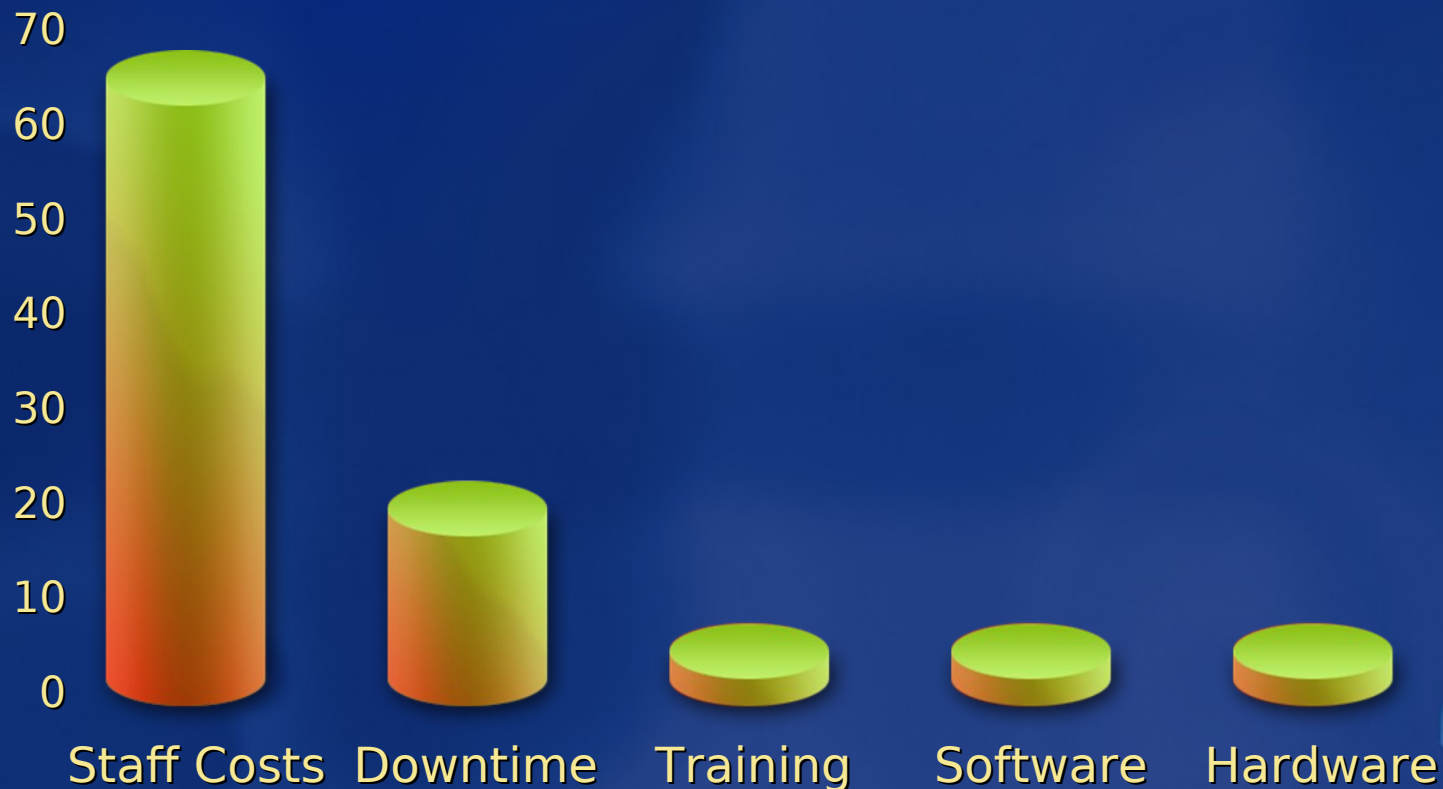
Complexity Across the IT Life Cycle



The Manual Reality

People-Intensive Nature Drives Costs

Over 60% of TCO over a five-year period is driven by people costs

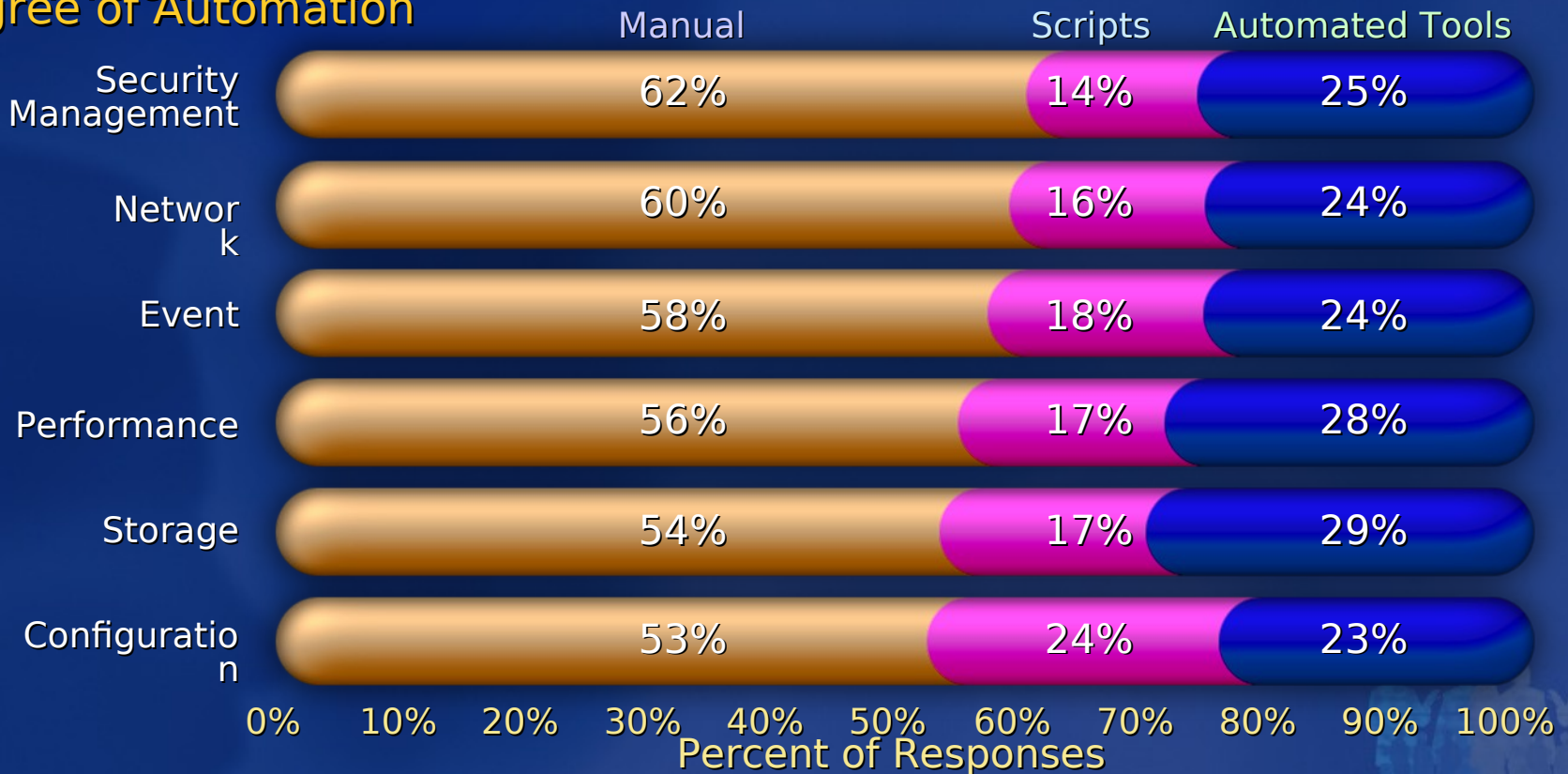


The Manual Reality

People-Intensive Nature Drives Costs

IT professionals are
spending their time on
manual tasks

Degree of Automation



Challenges Span the IT Life Cycle

**How Do I
Capture
Operational
Requirements
?**

Development



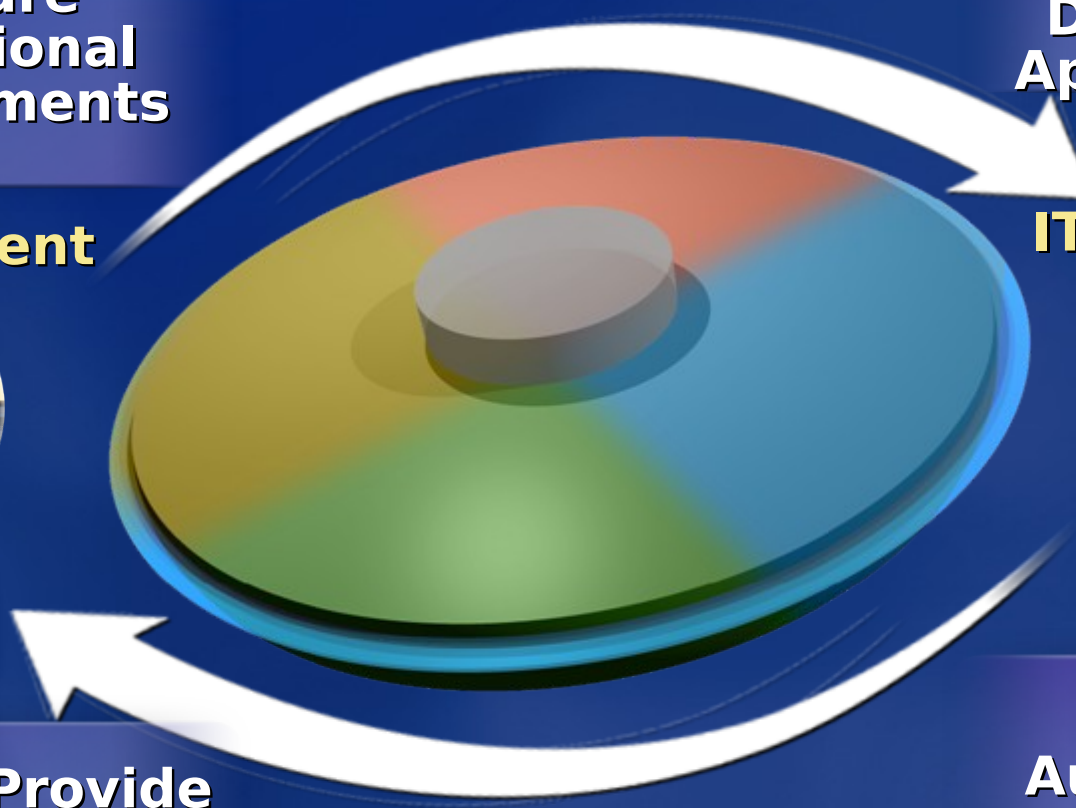
**How Do I
Deploy
Distributed
Applications?**

IT Operations



**How Do I Provide
Requirements to
Development?**

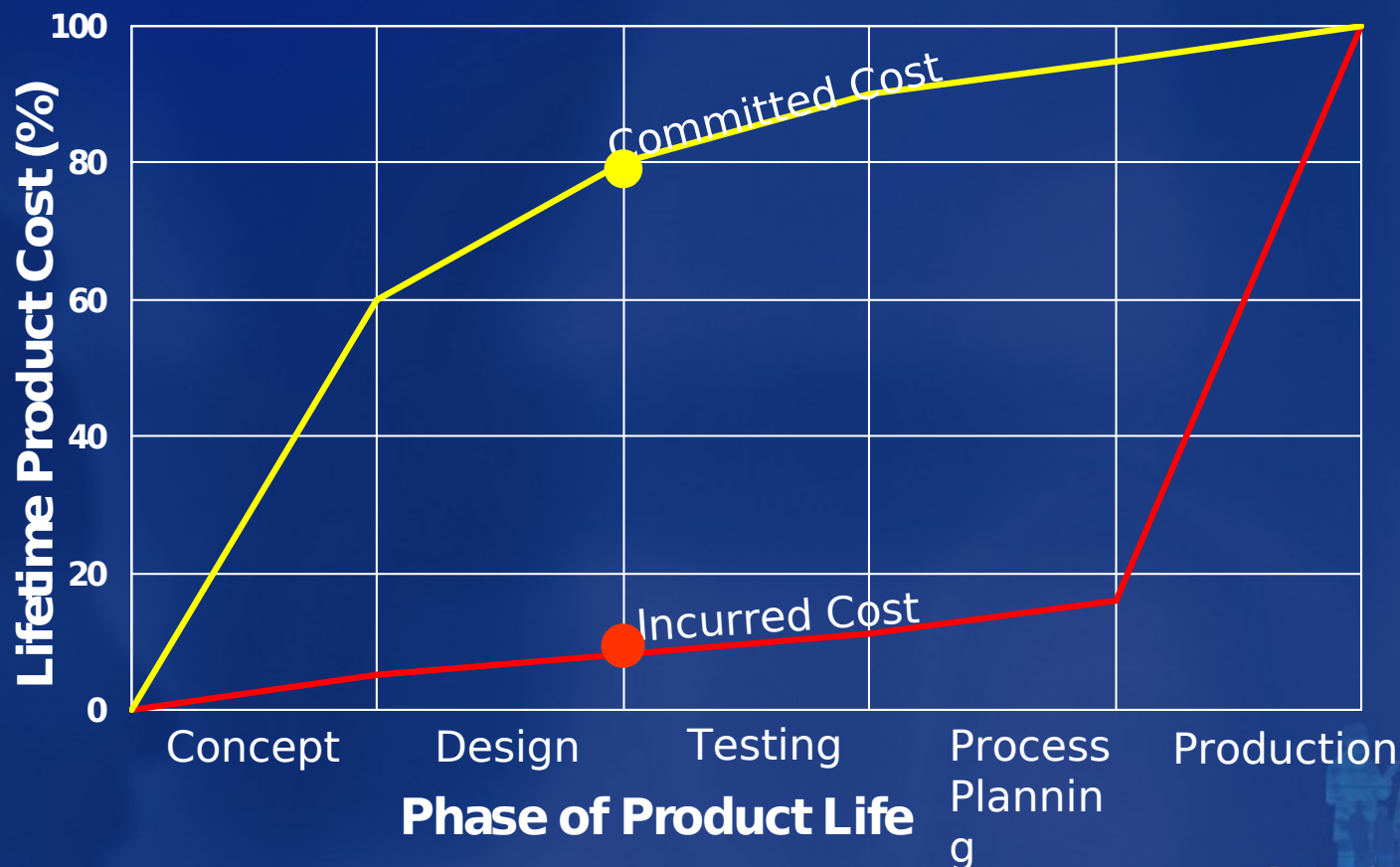
**How Do I
Automate and
Centrally
Manage?**



Design for Manufacturability

Lessons Learned from the Manufacturing Industry

8% of the budget spent during design locked down
80% of the lifetime product cost



Dynamic Systems Initiative

Industry-wide Initiative to Simplify and Automate How Customers

Design, Deploy, and Operate Distributed Systems

Multi-year, integrated innovation across the MS product family

Product roadmap aligning around a software breakthrough

Broad partner ecosystem delivering DSI-enabled products and solutions

Microsoft
 Visual Studio .net™

Microsoft
 Windows Server

Microsoft
 Windows Server System

Microsoft
Operations Manager
Systems Management Server 2003

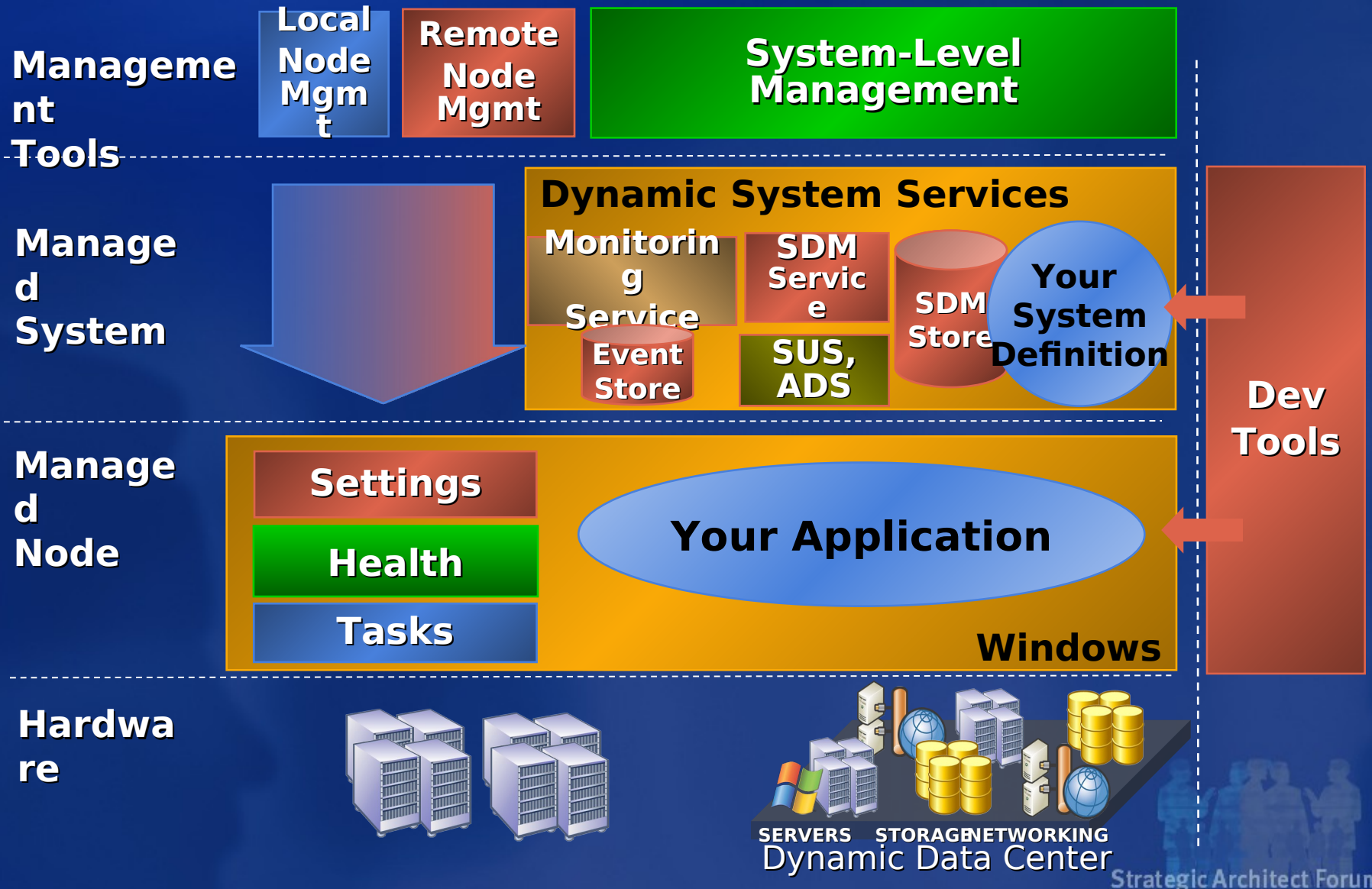
System Center

*Software Breakthrough:
System Definition Model (SDM)*

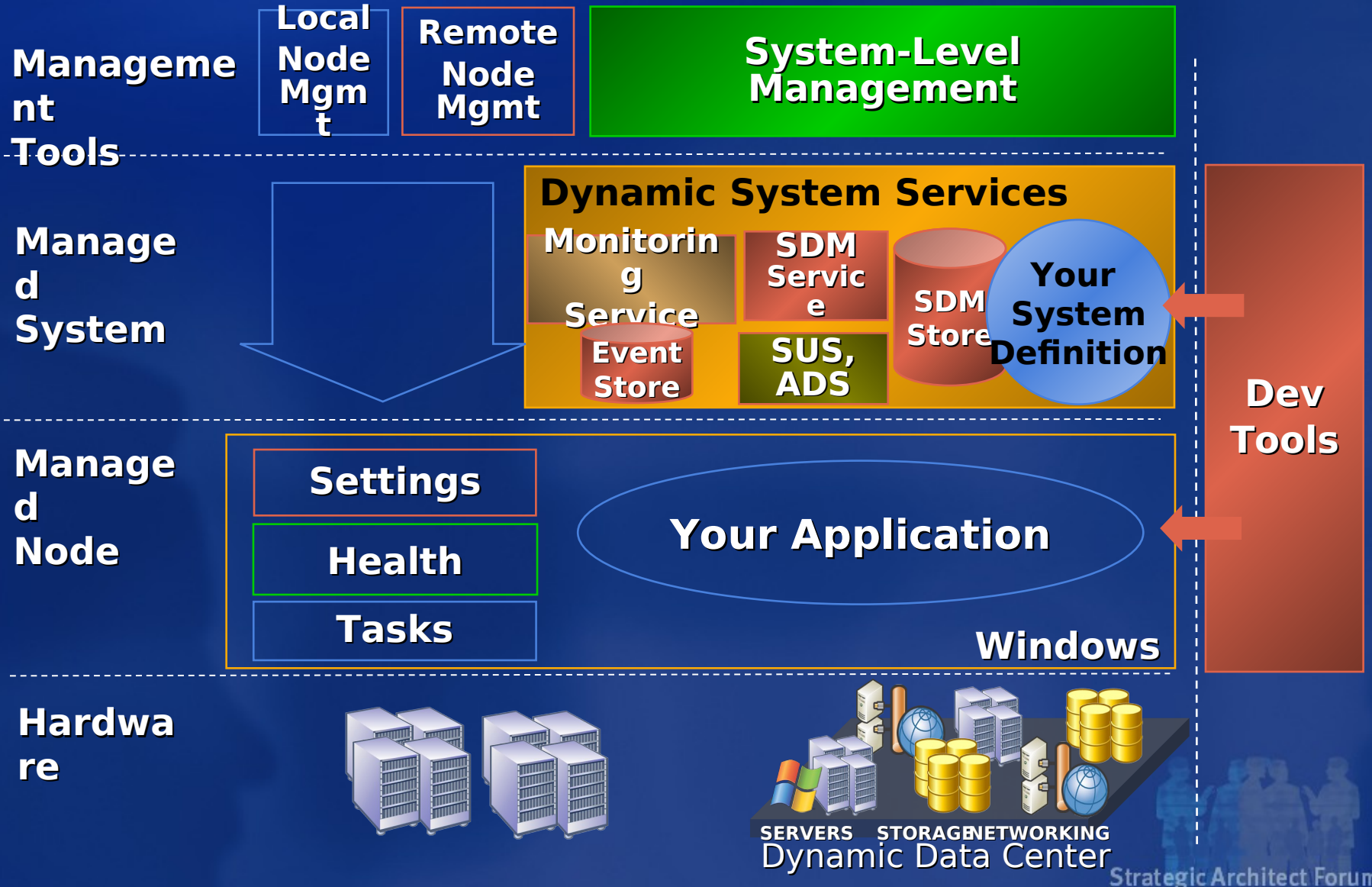
IHV, ISV, System Integrators

- ❖ *Develop more manageable apps*
- ❖ *Enhance capabilities on Microsoft Windows®*
- ❖ *Ensure heterogeneous interoperability*

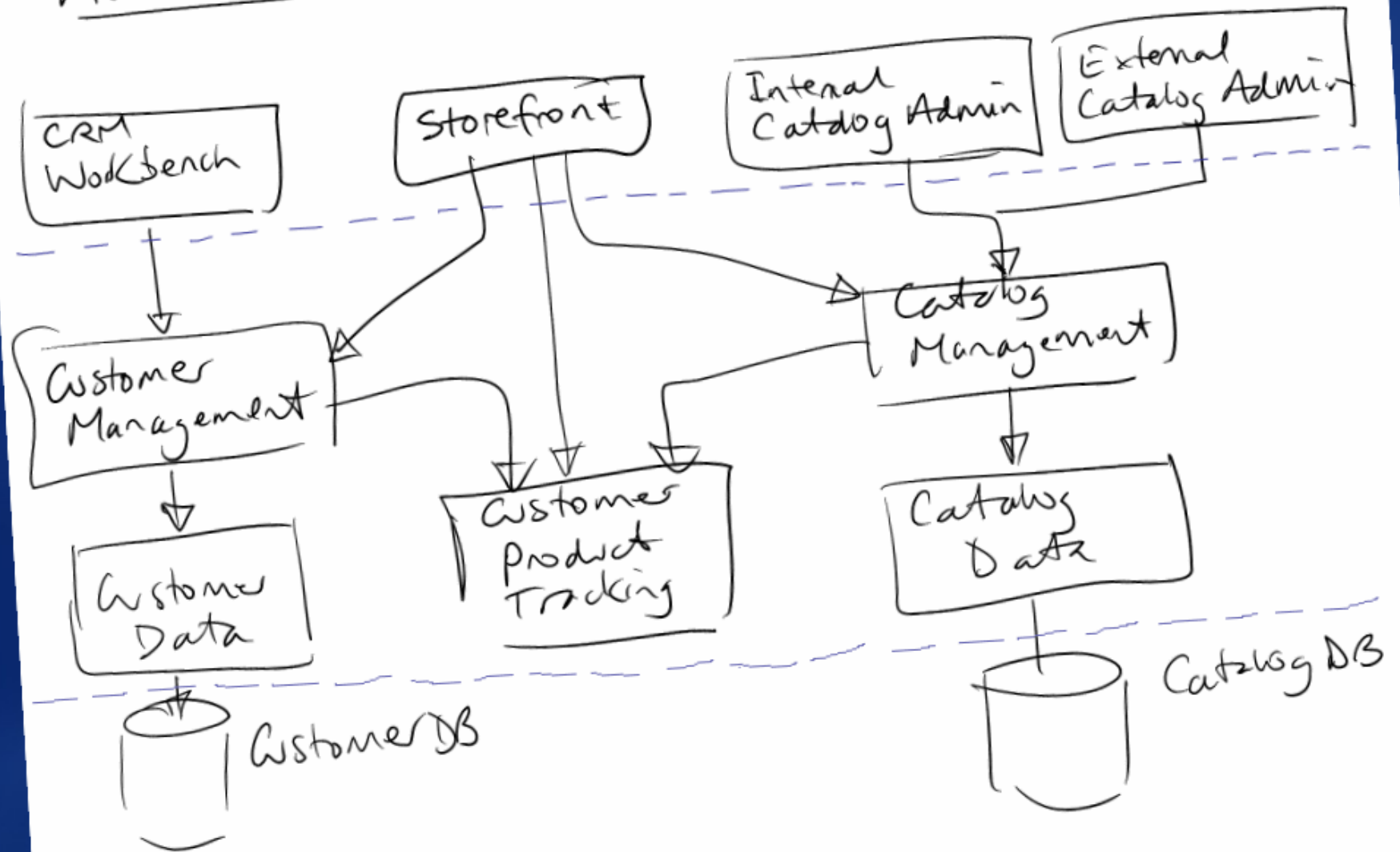
DSI Architecture



DSI Architecture



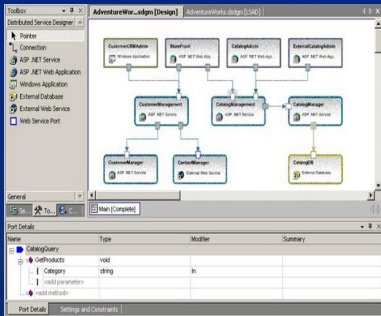
Adventure Works



System Definition Model

Creating a Living *Blueprint* of a System

1



Create a definition of a new or existing system

Resources Required

Operations Capabilities

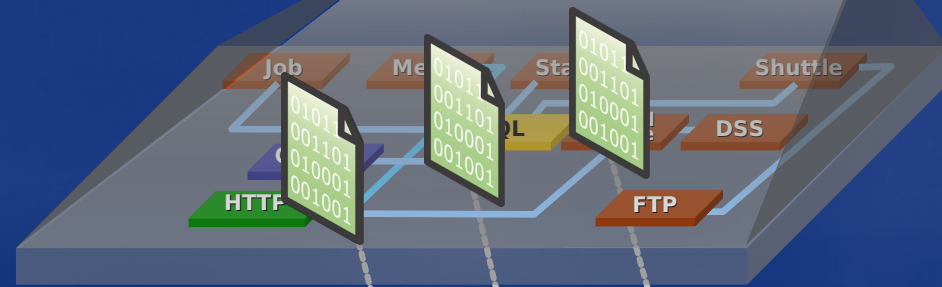
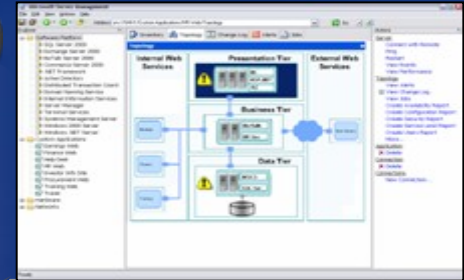
Operational Policies



SDM Document

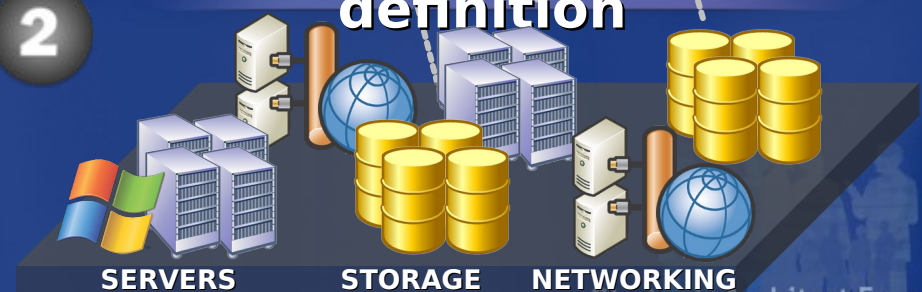
3

Operate the system based on its definition



Automatically allocate and configure resources using its definition

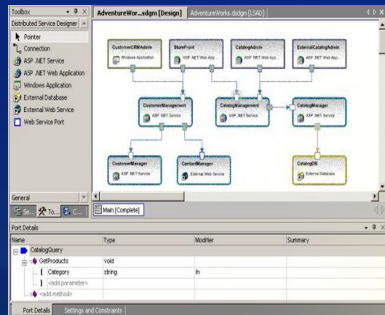
2



System Definition Model

Creating a Living *Blueprint* of a System

1



Create a definition of a new or existing system

Resource Required

Operations Capabilities

Design for Operations



SDM Document

3

Operate the system based on its definition



Automatically and configure resource definition

2

Dynamic Data Center



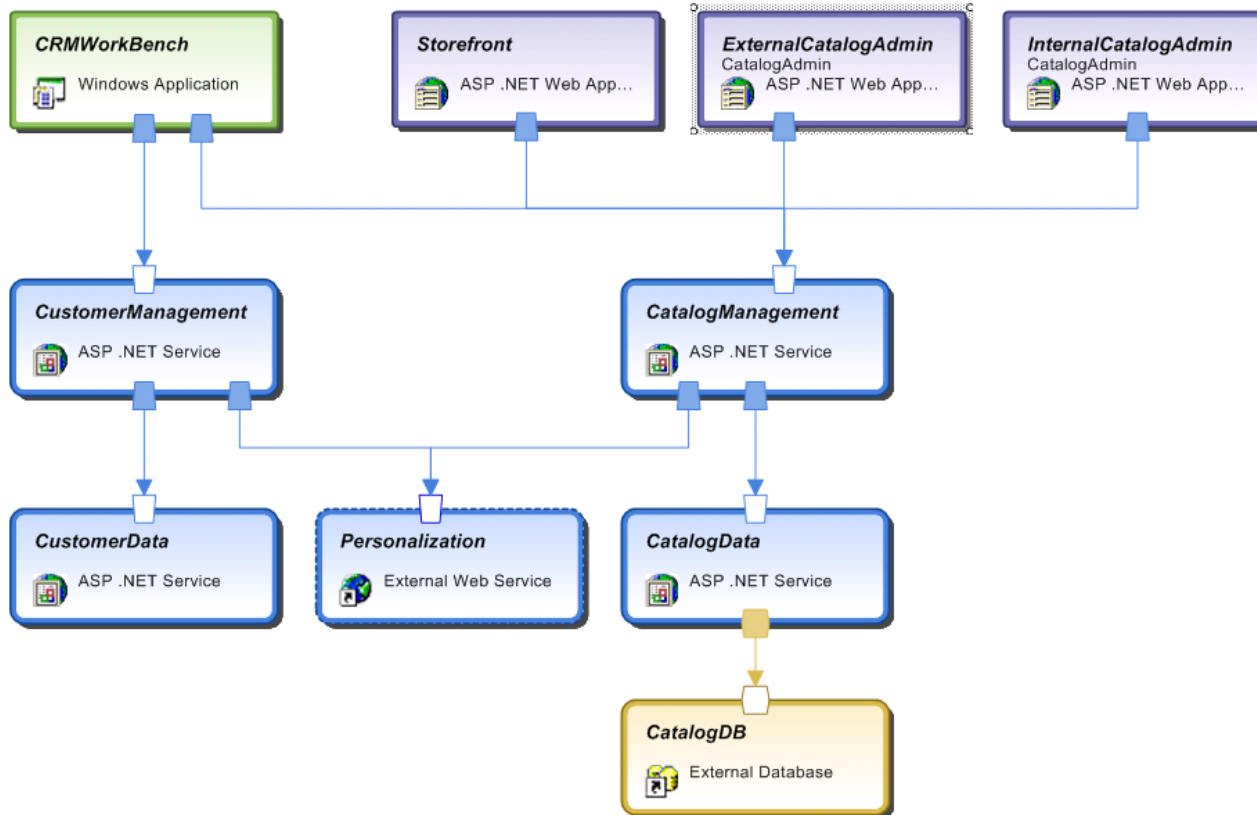
Definition of a System

- ❖ A Definition of a System
 - ◆ ...is declared inside an SDM document
 - ◆ ...includes software and hardware resources
 - ◆ ...exposes communication endpoints
 - ◆ ...includes other subsystems
 - ◆ ...includes relationships
 - ◆ ...is authored by developers and architects
 - ◆ ...is used for new and existing systems
 - ◆ ...is used during development, deployment, and ongoing operations
- ❖ Resources, Endpoints, and Relationships Have Definitions As Well

Skeleton of a System

- ❖ A Definition of a System Captures the Basic Structure
- ❖ Other Information Added Includes:
 - ◆ Specific deployment and installation instructions, configuration, health models, events and instrumentation, tasks and automation, operational policies, SLAs, etc.
 - ◆ Added by operations staff, vendors, tools
- ❖ SDM-Compliant Offerings Will Include an Extensible Library of Base Definitions
 - ◆ Web application, Web service, database, Web servers, SQL server, operating systems, servers, storage, etc.

AdventureWorks



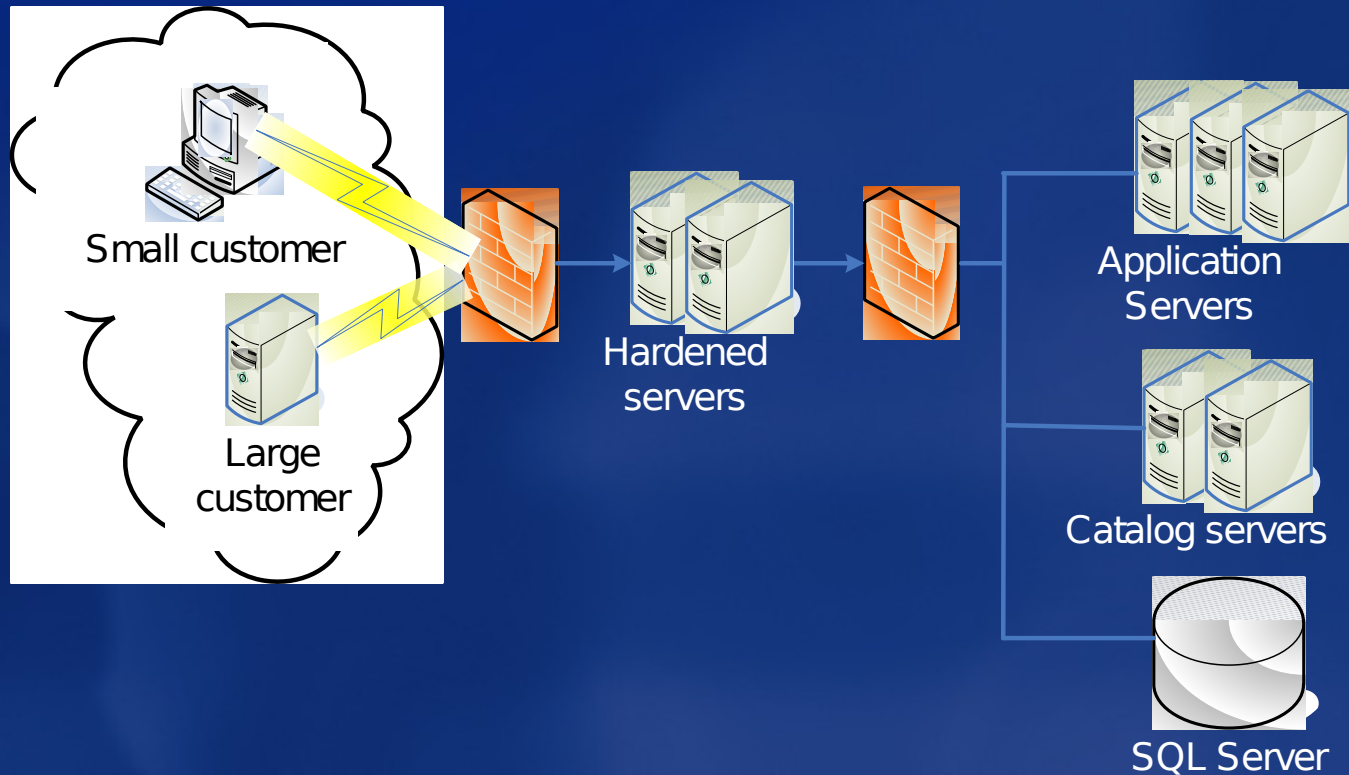
Solution 'AdventureWorks' (5 projects)

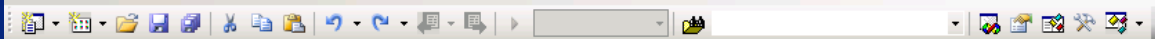
- Solution Items
 - AdventureWorks.dsdgm
- CRMWorkBench
 - References
 - Web References
 - localhost
 - localhost1
 - app.config
 - App.ico
 - AssemblyInfo.cs
 - Form1.cs
 - http://localhost/CatalogData/
 - Code
 - Catalog.cs
 - DatabaseConnections.cs
 - Catalog.aspx
 - web.config
 - http://localhost/CatalogManagement/
 - Code
 - Catalog.wsdl
 - CatalogMgt.cs
 - Personalization.wsdl
 - CatalogMgt.aspx
 - web.config
 - http://localhost/CustomerData/
 - Code
 - Customer.aspx
 - web.config
 - http://localhost/CustomerManagement/

impersonate	False
requiresSSL	False
requiresSSL	False

Component Descripti	
Component Name	ExternalCatalogAdmin
Component Type Des	
Component Type Nar	CatalogAdmin

AdventureWorks Data Center





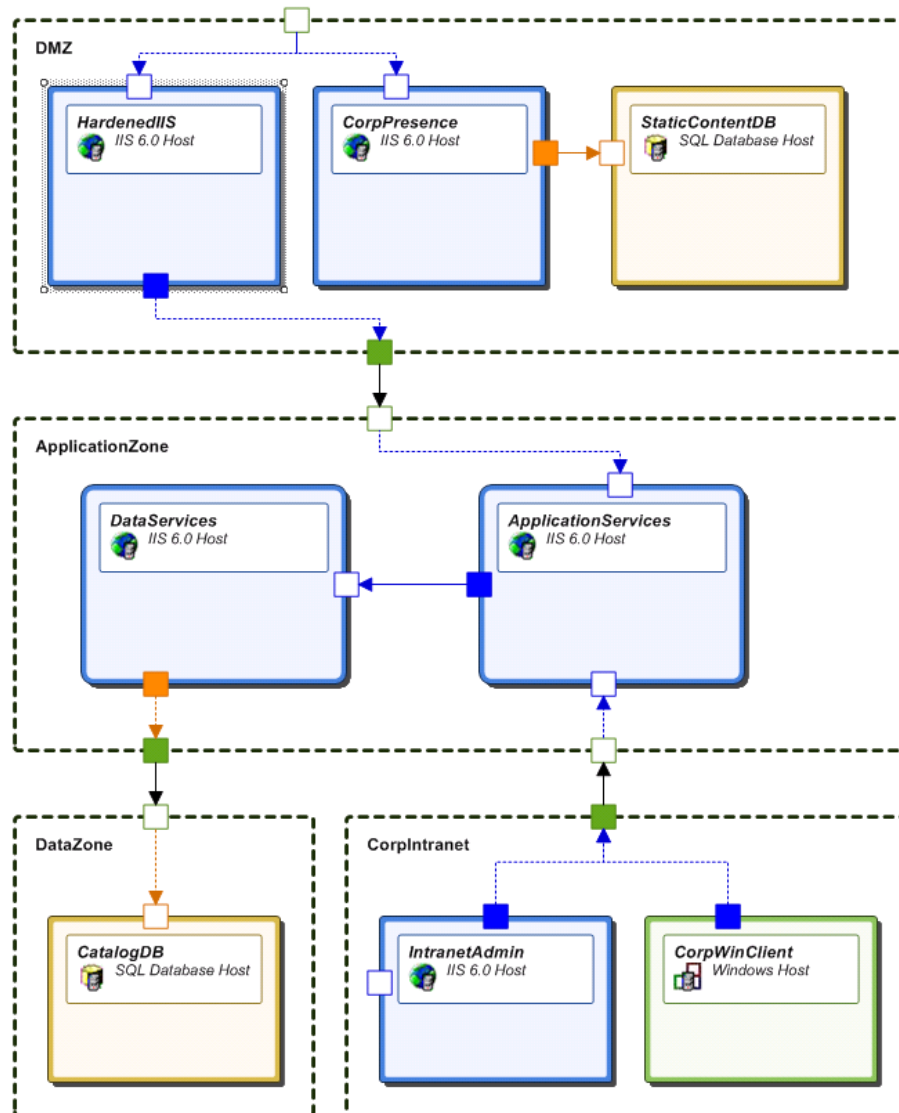
100%

Toolbox

Logical System Architecture...

- Pointer
- Connection
- Zone Port
- Zone
- Web Site Port
- HTTP Client Port
- HTTP Server Port
- TCP Client Port
- TCP Server Port
- TDS Client Port
- TDS Server Port
- IIS 6.0 Host
- SQL Host
- Windows Host

AdventureWorks.dsdgm [Design]* | AdventureWorks.dsdgm [Configure]* | AdventureWor...sdgm [LSAD]*



Solution Explorer - Solution 'AdventureWorks' (0 p...

Solution Explorer

- Solution 'AdventureWorks' (0 projects)
- Solution Items
 - AdventureWorks.dsdgm

Solution Expl... Create Logical ... Class View

Properties

HardenedIIS IIS6Class

2

Authentication

anonymousUserName	MyAccount\MyDomain
anonymousUserPass	*****

Configuration

scriptAccess	(scriptAccess)
SSL Access Flags	(sslAccess)

Design

Component Description	
Component Name	HardenedIIS
Component Type Description	
Component Type Name	IIS1Type

Management Configuration

agentInstalled	False
slmInstalled	False

Settings

Max. Bandwidth	100
----------------	-----

Status

Read only	False
-----------	-------

Component Name

The name of the component.

Dynamic Help

No links are available for the current selection.

Server Expl... Toolbox

Ready

Layers of Systems

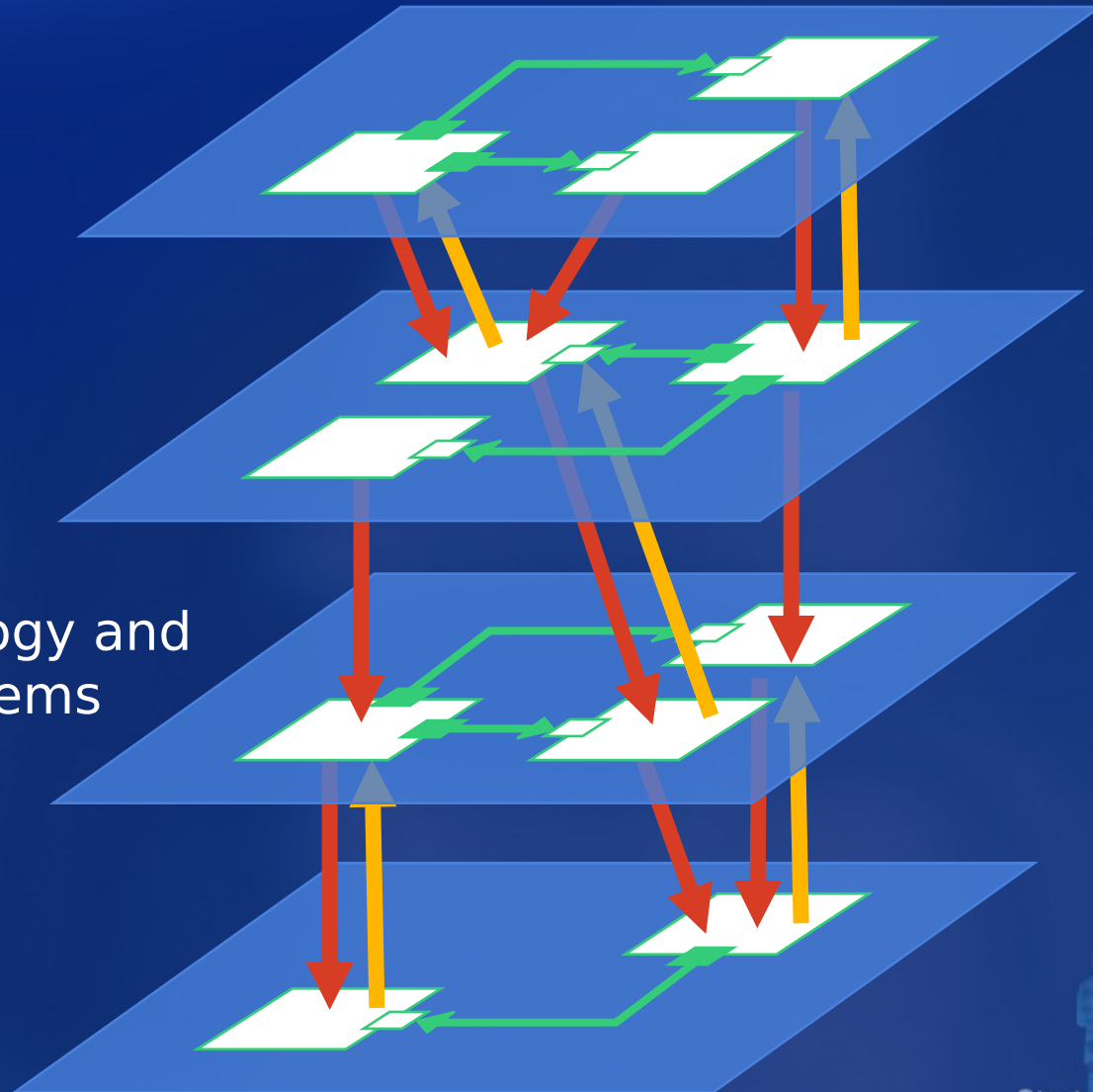
Enabling Design for Operations

Applications

Application
Hosts

Network Topology and
Operating Systems

Hardware



Example Capabilities Enabled

What Can I Do with a Definition?

- ❖ Design-Time Validation
 - ◆ Catch operational faults early
- ❖ Automated System Deployment
 - ◆ Hardware and software resource allocation
 - ◆ Resource configuration and validation
- ❖ System-Level Operations
 - ◆ Desired state management
 - ◆ Improved monitoring
 - ◆ Automating operational processes



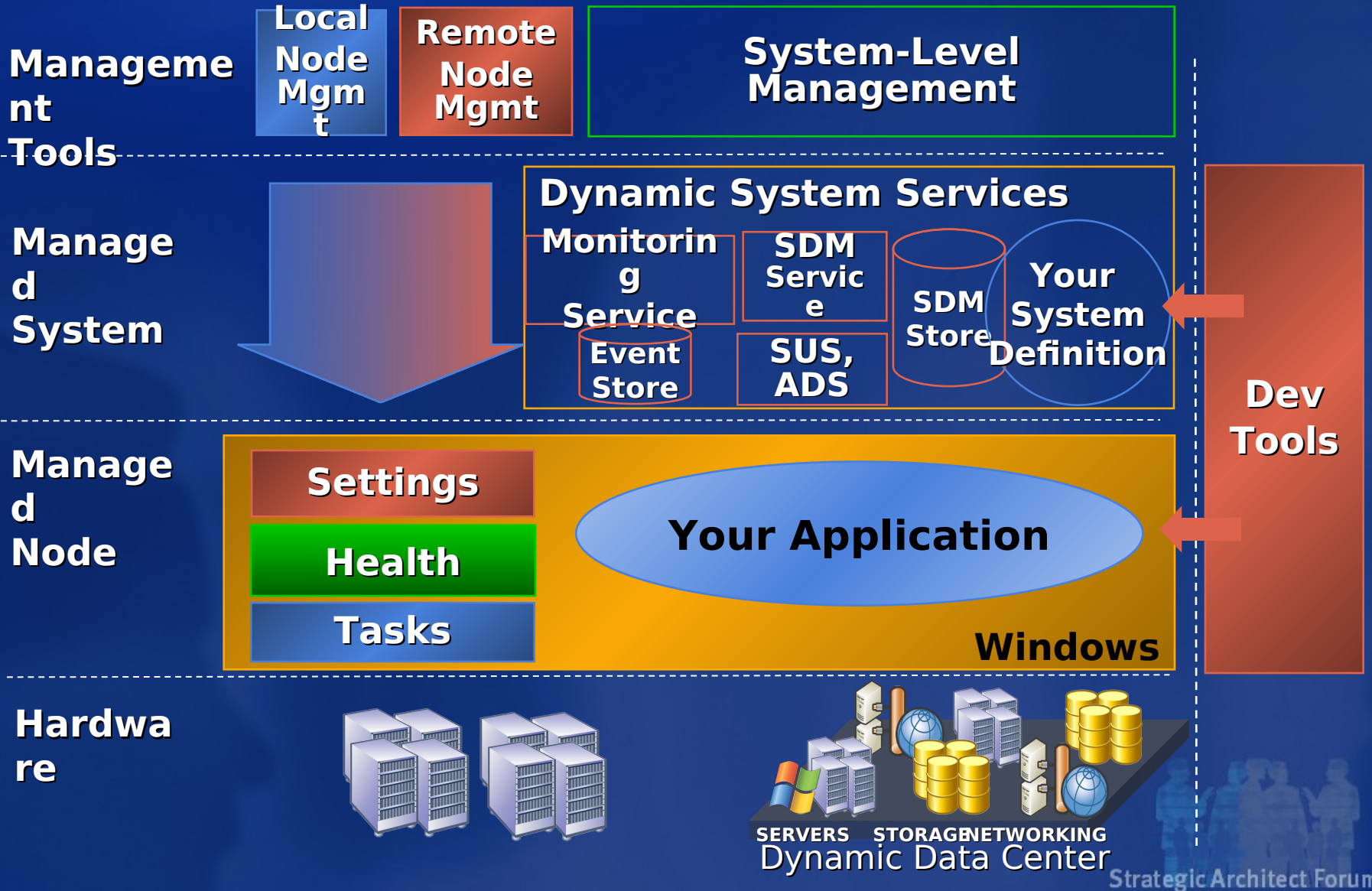
Near-Term Focus

Top Customer Pain

- ❖ Distributed Software Deployment
 - ◆ Software Update Service
 - ◆ Microsoft Systems Management Server (SMS)
 - ◆ Automated deployment services
- ❖ Distributed Monitoring
 - ◆ Microsoft Operations Manager (MOM)
 - ◆ Windows Monitoring Services in “Longhorn”



Applications



Applications

Basis for Manageable Systems

❖ Today's Challenges

- ◆ Developed in separate organizations
- ◆ Duct-taped onto the application
- ◆ Different technologies and methodologies

❖ Current Tools

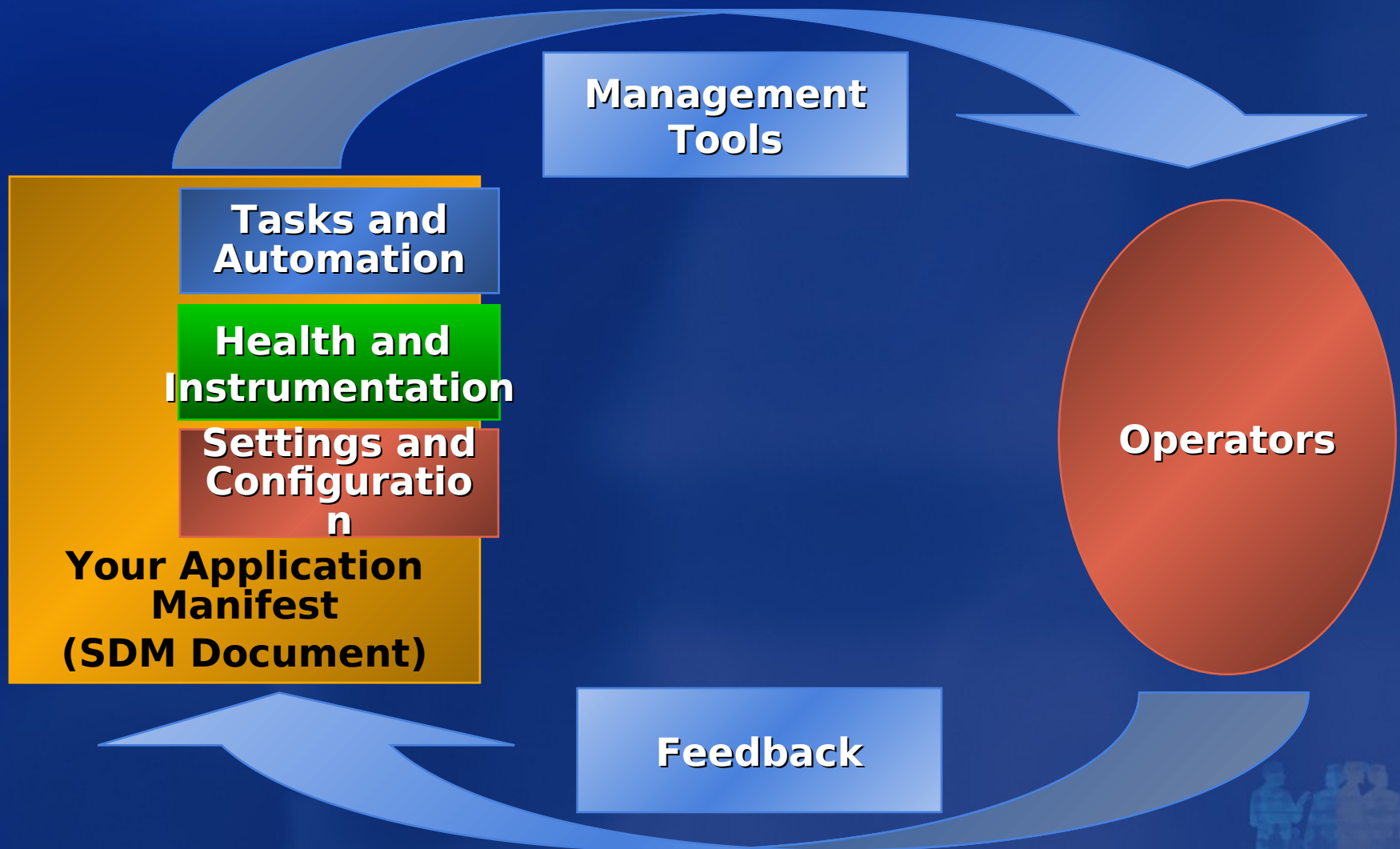
- ◆ MOM Management Packs
- ◆ Enterprise Instrumentation Framework (EIF)

❖ Windows “Longhorn” Will Dramatically Improve Application Management

- ◆ Improved management infrastructure
- ◆ Participatory model
- ◆ Guidelines for “Design for Operations”



Manageable Application



Settings and Configuration

- ❖ Settings Critical for Manageable Applications
- ❖ Administration Problems Abound
 - ◆ Fragility in configuration changes
 - ◆ Multiple setting stores (REG, INI files, etc.)
 - ◆ Application settings are not discoverable
 - ◆ Hard to migrate / roam / back up settings
 - ◆ Weak at security, consistency, history, and isolation
- ❖ Improved Settings Infrastructure in “Longhorn”
 - ◆ Applications declare their settings
 - ◆ Windows provides settings management



Health and Instrumentation

- ❖ ...Necessary for Good Management; Today,
 - ◆ Health determined by operators based on experience
 - ◆ Applications' instrumentation not discoverable
 - ◆ Instrumentation infrastructure is complex
- ❖ Improvements in “Longhorn”
 - ◆ Applications declare their health states in the manifest
 - ◆ User guidance, verification, corrective action, and feedback
 - ◆ Enhancements to events, traces, performance counters, probes, and corporate error reporting
- ❖ Monitoring Will Become Ubiquitous
 - ◆ Monitoring service in “Longhorn”
 - ◆ Investment in MOM and EIF will be preserved

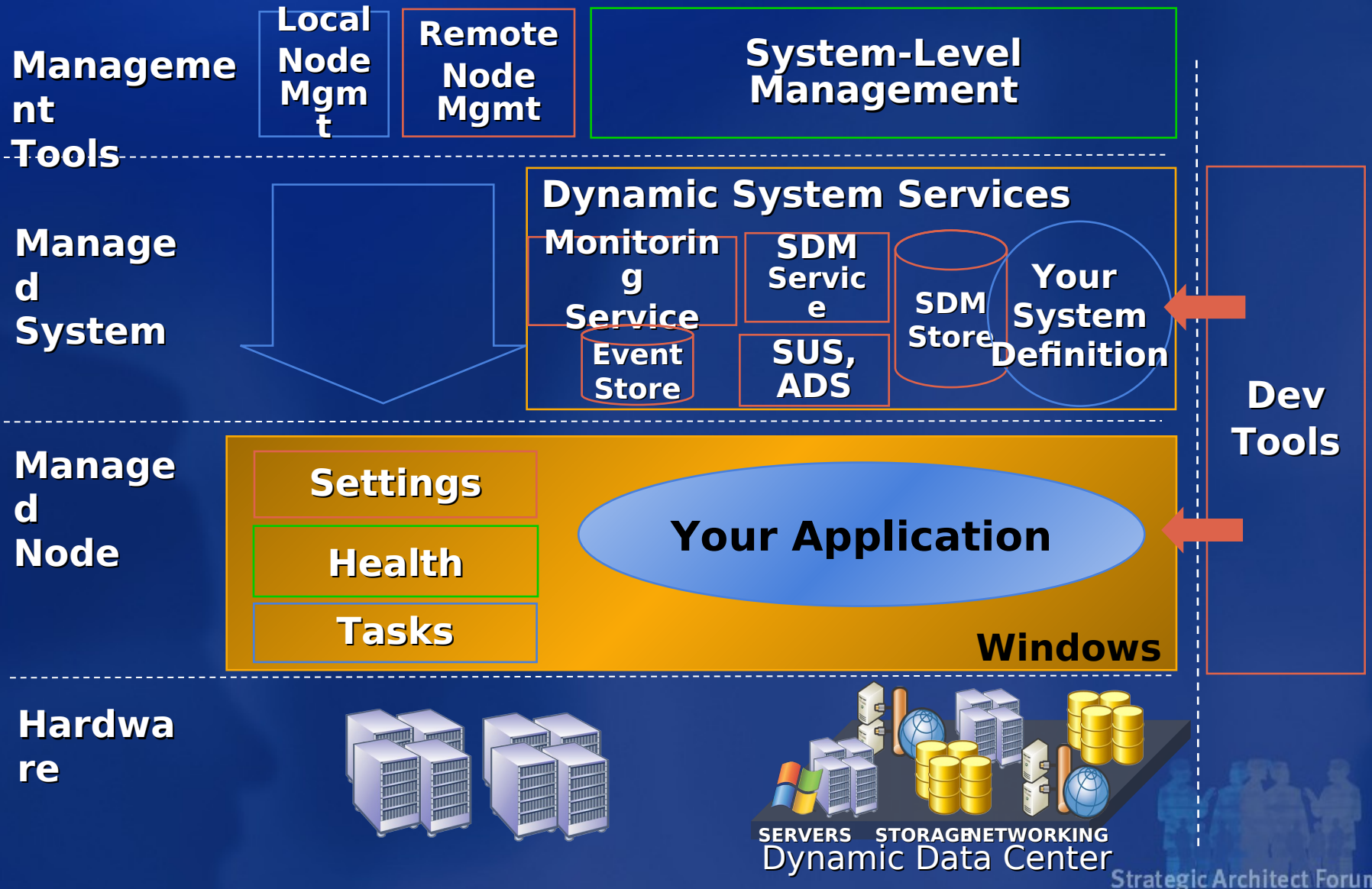


Task-Based Management

- ❖ Tasks Are Actions That Operators Perform
- ❖ Today These Are Done in GUI or CLI
 - ◆ No separation between UI and underlying task
 - ◆ Developer-centric APIs are at a lower level
 - ◆ Operators have to learn each tool
- ❖ Improvements in “Longhorn”
 - ◆ Task authoring using Microsoft .NET and attribution model
 - ◆ Common GUI and CLI based on tasks
 - ◆ Standard model for parameter passing and execution
 - ◆ New shell language—composition of tasks
 - ◆ Methodology for good tasks
 - ◆ <Create> <Web Site> on <Web Server>
- ❖ Windows Goal Is to Be 100% Task-Based

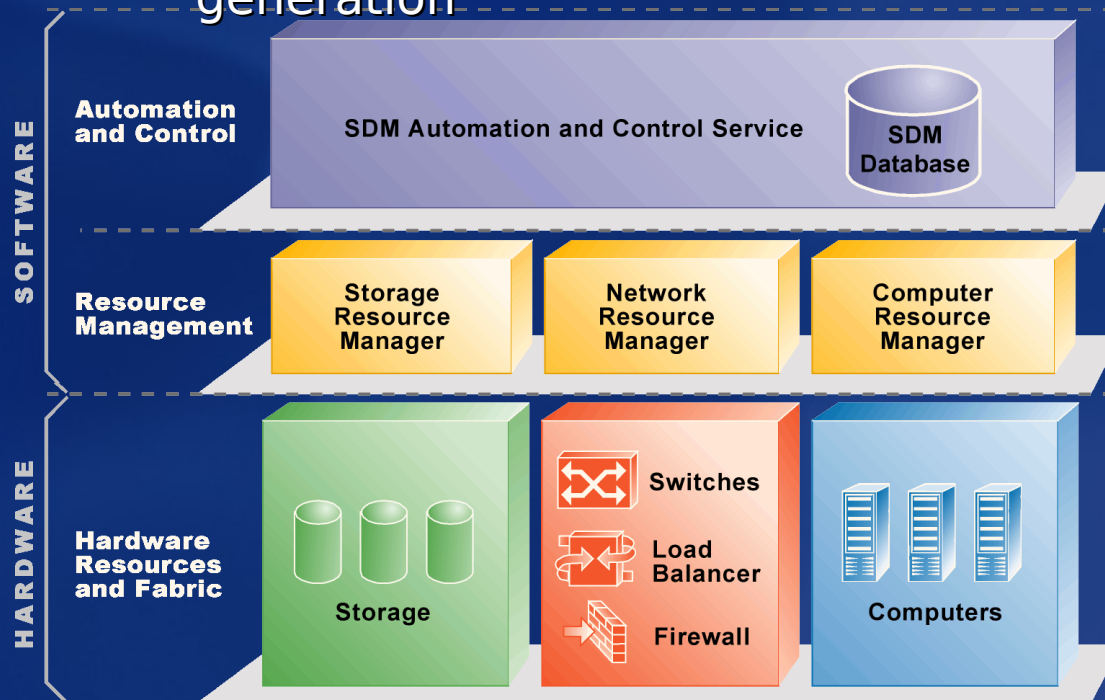


Core Infrastructure



A Dynamic Data Center (DDC)

- ❖ Virtualize a Set of Industry-Standard Hardware Building Blocks
 - ♦ Well-defined topology of Windows-certified servers, storage, network devices; including Ethernet and optional SAN fabric
- ❖ Dynamically Provisioned and Centrally Managed by Software
 - ♦ Centralized hardware resource management, automated operating system and application provisioning, and flexible network topology generation



Broad Server OEM Support Today



Automated Deployment Services

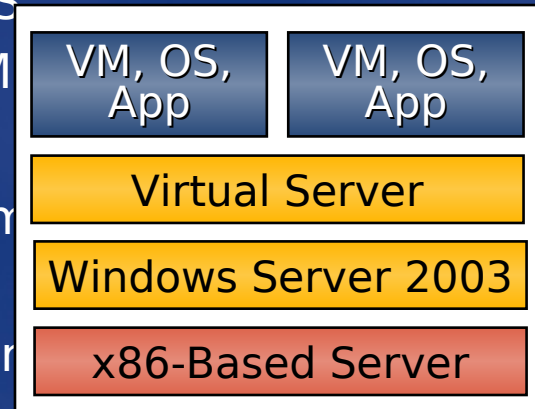
- ❖ Complete Infrastructure for Rapidly Provisioning and Re-Provisioning Windows Servers
 - ◆ Imaging tools to capture and edit both Microsoft Windows 2000 and Microsoft Windows Server™ 2003 images
 - ◆ Secure, remote deployment framework enabling zero-touch server builds from bare metal
- ❖ A Framework for Mass Server Administration
 - ◆ Secure, reliable script-execution infrastructure
 - ◆ Programmatic model of your Windows data center
 - ◆ A persistent log of all administrative activities
- ❖ Graphical and Programmatic Interfaces
 - ◆ Simple MMC UI for GUI-based operation
 - ◆ Full functionality exposed through command-line tools and/or WMI layer



Virtual Server

H1 2004

- ❖ Microsoft's Virtual Machine Solution for:
 - ◆ Microsoft Windows NT® 4.0 application migration
 - ◆ Departmental and branch office server consolidation
 - ◆ Test / dev automation
- ❖ Robust Virtualization
 - ◆ All x86 operating systems will run in guest OS
 - ◆ Up to 32 processors and 64 gigabytes of RAM
- ❖ Comprehensive manageability
 - ◆ VHDs and XML config files → Flexible deployment
 - ◆ Robust COM API for programmatic control
 - ◆ Integrated with traditional server management
- ❖ Key Customer Benefits
 - ◆ Increased flexibility and utilization of hardware
 - ◆ Improved application compatibility
 - ◆ Enhanced automation of server infrastructure



DSI Roadmap

Product
s/
Solution

2003

2004-2005

2006+

Management
Solutions

Microsoft
**Systems
Management
Server** 2003

Microsoft
**Operations
Manager** 2004

Microsoft
**System
Center**

Microsoft
**Management
Alliance**

Third-Party
Management
Products and

Server Apps
and
Dev Tools

Microsoft
Visual Studio.net

Microsoft
SQL Server

Microsoft
**Exchange
Server**



Microsoft
Windows Server System

Microsoft
**Visual
Studio®
"Whidbey"**

Microsoft
CERTIFIED
Partner

Third-Party ISVs
and Tool Vendors

Visual Studio
"Orcas"

Windows
Server

Microsoft
Windows Server 2003

Microsoft Virtual
Server



Automated
Deployment
Services (ADS)



Software Update
Services (SUS)



Dynamic Data
Center

Summary

- ❖ Dynamic Systems Initiative (DSI) is an industry-wide initiative to reduce IT complexity across the entire life cycle of systems
- ❖ System Definition Model (SDM) is used to created definitions of distributed systems
 - ◆ Used during development, deployment, and ongoing operations
- ❖ Manageable application components are the building blocks of distributed systems



Resources

❖ White Papers

- ♦ Dynamic System Initiative
 - ♦ http://download.microsoft.com/download/e/5/6/e5656886-ad18-4afd-945f-3680278dfd58/DSI_overview.doc_
- ♦ Design for Operations
 - ♦ <http://www.microsoft.com/windowsserver2003/techinfo/overview/designops.mspx>
- ♦ Dynamic Data Center
 - ♦ <http://www.microsoft.com/whdc/hwdev/platform/server/datacenter/dynamiccdc.mspx>
- ♦ Service-Oriented Application Designer
 - ♦ <http://msdn.microsoft.com/vstudio/productinfo/enterprise/enterpriseroadmap/default.aspx?pull=/library/en-us/dnvsent/>



Questions?





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